



Tennessee Department of Environment and Conservation
Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
(615) 532-0625

Municipal Separate Storm Sewer System (MS4) Annual Report

2016 NOV -9 AM 9:35

1. MS4 INFORMATION

City of Greenbrier, Tennessee

TNS077810

Name of MS4

MS4 Permit Number

Tommy Maitland

cityofgreenbrier@greenbriertn.org

Name of Contact Person

Email Address

(615) 643-4531

Telephone (including area code)

P.O. Box 466, 202 W. College Street

Mailing Address

Greenbrier

TN

37073

City

State

ZIP code

What is the current population of your MS4? 6,433

What is the reporting period for this annual report? From 1/1/2015 to 12/31/2015

2. WATER QUALITY PRIORITIES (SECTION 3.1)

- A. Does your MS4 discharge into waters listed as impaired on TN's most current 303(d) list and/or according to the on-line GIS mapping tool? If yes, please attach a list all impaired waters within your jurisdictional area. ☒ Yes ☐ No *See Attached*
- B. Does your MS4's jurisdictional area contain any waterbodies where a TMDL has been approved for parameters other than pathogens, siltation and habitat alterations? If yes, please attach a list. ☐ Yes ☒ No
- C. What specific sources of these pollutants of concern are you targeting? *See Attached*
- D. Do you have discharges to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? If yes, please attach a list. ☐ Yes ☒ No
- E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? ☐ Yes ☒ No

3. PROTECTION OF STATE OR FEDERALLY LISTED SPECIES (SECTION 3.2.1 General Permit for Phase II MS4s)

- A. Are there any state or federally listed species within the MS4's jurisdiction? ☐ Yes ☒ No
- B. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species? ☐ Yes ☒ No
- C. Please attach any authorizations or determinations by U.S. Fish & Wildlife Service on the effect of the MS4 discharges on state or federally listed species.

4. PUBLIC EDUCATION AND PUBLIC PARTICIPATION (SECTION 4.2.1 AND 4.2.2)

- A. Is your public education program targeting specific pollutants and sources of those pollutants? ☒ Yes ☐ No
- B. Is your public education program targeting specific pollutants and sources of those pollutants, such as Hot Spots? ☒ Yes ☐ No
- C. If yes, what are the specific causes, sources and/or pollutants addressed by your public education program? *See Attached*

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- D. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period. See Attached
- E. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? See Attached
- F. How do you facilitate, advertise, and publicize public involvement and participation opportunities? See Attached
- G. Do you have a webpage dedicated to your stormwater program? If so, what is the link/URL: See Attached ☒ Yes ☐ No
- H. Are you tracking and maintaining records of public education, outreach, involvement and participation activities? Please attach a summary of these activities. ☐ Yes ☒ No
5. **ILLICIT DISCHARGE DETECTION AND ELIMINATION (SECTION 4.2.3)**
- A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? See Attached ☐ Yes ☒ No
- B. Have you completed a map of all storm drain pipes of storm sewer system? See Attached ☐ Yes ☒ No
- C. How many outfalls have you identified in your system? See Attached
- D. Have any of these outfalls been screened for dry weather discharges? See Attached ☐ Yes ☒ No
- E. What is your frequency for screening outfalls for illicit discharges? See Attached
- F. Do you have an ordinance that effectively prohibits illicit discharges? ☒ Yes ☐ No
- G. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? See Attached
- H. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? See Attached
6. **CONSTRUCTION SITE STORMWATER RUNOFF (SECTION 4.2.4)**
- A. Do you have an ordinance or adopted policies stipulating:
- | | | |
|--|---|-----------------------------|
| Erosion and sediment control requirements? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Other construction waste control requirements? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Requirement to submit construction plans for review? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| MS4 enforcement authority? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? See Attached
- C. How many of these active sites did you inspect this reporting period? See Attached
- D. On average, how many times each, or with what frequency, were these sites inspected (e.g., weekly, monthly, etc.)? See Attached
- E. Do you prioritize certain construction sites for more frequent inspections? ☒ Yes ☐ No
If yes, based on what criteria? See Attached
7. **PERMANENT STORMWATER CONTROLS (SECTION 4.2.5)**
- A. Do you have an ordinance or other mechanism to require:
- | | | |
|---|---|-----------------------------|
| Site plan reviews of all new and redevelopment projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Maintenance of stormwater management controls? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Retrofitting of existing BMPs with green infrastructure BMPs? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

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- B. What is the threshold for new/redevelopment stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc). See Attached
- C. Have you implemented and enforced performance standards for permanent stormwater controls? ☒ Yes ☐ No
- D. Do these performance standards go beyond the requirements found in Section 4.2.5.2 and require that predevelopment hydrology be met for:
- | | | |
|----------------------|---|-----------------------------|
| Flow volumes | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Peak discharge rates | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Discharge frequency | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Flow duration | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- E. Please provide the URL/reference where all permanent stormwater management standards can be found. See Attached
- F. How many development and redevelopment project plans were reviewed for this reporting period? See Attached
- G. How many development and redevelopment project plans were approved? See Attached
- H. How many permanent stormwater management practices/facilities were inspected? See Attached
- I. How many were found to have inadequate maintenance? See Attached
- J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify.) See Attached
- K. How many enforcement actions were taken that address inadequate maintenance? See Attached
- L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☐ Yes ☒ No
- M. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☐ Yes ☒ No
- N. Has the MS4 developed a program to allow for incentive standards for this redeveloped sites? ☐ Yes ☒ No
- O. How many maintenance agreements has the MS4 approved during the reporting period? See Attached
- 8. CODES AND ORDINANCES REVIEW AND UPDATE (SECTION 4.2.5.3)**
- A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? ☐ Yes ☒ No
- B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. See Attached
- 9. STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS (SECTION 4.2.6)**
- A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:
- | | | | |
|---|---------------------|---|-----------------------------|
| All parks, ball fields and other recreational facilities | <u>See Attached</u> | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal turf grass/landscape management activities | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal maintenance yards | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal waste handling and disposal areas | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. Are stormwater inspections conducted at these facilities? ☒ Yes ☐ No
If yes, at what frequency are inspections conducted? See Attached
- C. Have standard operating procedures or BMP's been developed for all MS4 field activities? (e.g, road repairs, catch basin cleaning, landscape management, etc). ☒ Yes ☐ No
- D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? ☒ Yes ☐ No
- E. On average, how frequently are catch basins and other inline treatment systems inspected? See Attached

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F. On average, how frequently are catch basins and other inline treatment system cleaned out/maintained? See Attached

G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management?

☒ Yes

☐ No

H. If yes, do you also provide regular updates and refreshers?

☒ Yes

☐ No

If so, how frequently and/or under what circumstances? _____

See Attached

10 STORMWATER MANAGEMENT PROGRAM UPDATE (SECTION 4.4)

A. Describe any changes to the MS4 program during the reporting period including but not limited to: See Attached

Changes adding (but not subtracting or replacing) components, controls or other requirements (Section 4.4.2.a). _____

Changes to replace an ineffective or unfeasible BMP (Section 4.4.2b). _____

Information (eg. additional acreage, outfalls, BMP's) on program area expansion based on annexation or newly urbanized areas. _____

Changes to the program as required by the division (Section 4.4.3). _____

11. EVALUATING/MEASURING PROGRESS

A. What indicators do you use to evaluate the overall effectiveness of your Stormwater Management Program, how long have you been tracking them, and at what frequency? Note that these are not measurable goals for individual BMPs or tasks, but large-scale or long-term metrics for the overall program, such as in-stream macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc? See Attached

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	2003	Weekly April–September	20

B. Provide a summary of data (e.g., water quality information, performance data, modeling) collected in order to evaluate the performance of permanent stormwater controls installed throughout the system. This evaluation may include a comparison of current and past permanent stormwater See Attached

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12. ENFORCEMENT

- A. Identify which of the following types of enforcement actions you used during the reporting period, indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater control) or note those for which you do not have authority:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?	
Notice of violation	# _____	# _____	# _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Administrative fines	# _____	# _____	# _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Stop Work Orders	# <u>3</u>	# _____	# _____	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Civil penalties	# _____	# _____	# _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Criminal actions	# _____	# _____	# _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Administrative orders	# _____	# _____	# _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other _____	# _____	# _____	# _____		

- B. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions in your jurisdiction? ☐ Yes ☒ No

- C. What are the 3 most common types of violations documented during this reporting period? See Attached

13. PROGRAM RESOURCES (OPTIONAL)

- A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past reporting period? See Attached

- B. What is next year's budget for implementing the requirements of your MS4 NPDES permit and SWMP?

- C. Do you have an independent financing mechanism for your stormwater program? ☐ Yes ☒ No

- D. If so, what is it/are they (e.g., stormwater fees), and what is the annual revenue derived from this mechanism?

Source: _____ Amount \$ _____

Source: _____ Amount \$ _____

- E. How many full time employees does your municipality devote to the stormwater program (specifically for implementing the stormwater program vs. municipal employees with other primary responsibilities that dovetail with stormwater issues)? See Attached

- F. Do you share program implementation responsibilities with any other entities? ☐ Yes ☒ No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism

- G. Please attach a copy of your Organizational Chart

See Attached

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14. CERTIFICATION

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 of the permit.

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

BONNETTE A. DAWSON, Mayor

Printed Name and Title

Bonnette A. Dawson

Signature

11-4-16

Date

Annual reports must be submitted in accordance with the requirements of subpart 5.4. (Reporting) of the permit. Annual reports must be submitted to the appropriate Environmental Field Office (EFO) by January 31 of each calendar year, as shown in the table below:

EFO	Street Address	City	Zip Code	Telephone
Chattanooga	1301 Riverfront Parkway, Ste 206	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 432-4015
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000

CITY OF GREENBRIER

Addendum to 2015 MS4 Annual Report

2. Water Quality Priorities (Section 3.1)

A. The Proposed Final Version 2014 303(d) LIST for the Red River Watershed notes Waterbody ID TN05130206 003-1320 Unnamed tributary of Carr Creek (See Attached).

C. The identified municipal point source on the 2014 303(d) LIST for the Red River Watershed is the sewage treatment plant. Construction began on a treatment plant expansion to remediate some of the overflow issues during heavy rainfall events. This is a two year project estimated to cost \$5.5 Million. It will include an SBR Tank, a sludge digester, upsizing screw pumps and adding filters. The project will decrease the number of overflows and control VOC's.

4. Public Education and Public Participation (Sections 4.2.1 and 4.2.2)

C. The public education program targets erosion and sediment control on both large projects and small disturbances, animal waste, household hazardous waste, litter, fertilizers, pesticides and yard waste.

D. There is a continuing increase in awareness among the general public and the area developers regarding the city's commitment to addressing environmental issues. This is measured by an increase in public inquiries and incident reporting as well as noticeable care taken by builders and developers on local construction projects. The success of the community volunteer stream cleanup efforts and the annual City Cleanup Day may also be attributed to the public outreach.

E. An advisory committee does not currently exist. This is a planned effort to be accomplished in 2016 after staff training is completed.

F. Program information on erosion control, sanitary sewer systems, animal waste, hazardous waste, litter, fertilizers, pesticides and yard waste is available at city hall and on the city website. It is also available to all local schools. Information on stormwater issues, waste grass clippings, and waste disposal, as well as notices of recycle opportunities are published with water bills.

G. Information can be found at www.greenbriertn.org/building_codes.

H. Recordable events of public education were minimal in 2015 due to lack of trained staff. The City is planning renewal effort of the public education and awareness in 2016 after new staff is trained.

5. Illicit Discharge Detection and Elimination (Section 4.2.3)

A. The City has contracted the services of an engineering firm to prepare a base map of all outfalls and receiving waters of the storm sewer system in 2015 and 2016.

B. The proposed map in Item A will show storm drain systems that exist. The city storm sewer system currently consists of mostly open ditching with intermediate culvert pipes. Subdivision regulations and new stormwater ordinances now require the installation of storm drain systems, but very little new construction has occurred in the last four years due to the sewer expansion moratorium imposed by the state.

C. The number of outfalls will be determined as the map is developed.

D. Discharge information will be determined as the map is developed.

E. Discharge information will be determined as the map is developed.

G. Three significant illicit discharges were discovered and documented during this reporting period.

H. Stop Work Orders were issued and the owners were advised to remediate the issues. Site visits were performed as a follow-up.

6. Construction Site Stormwater Runoff (Section 4.2.4)

B. There were five active construction sites disturbing at least one acre during this reporting period.

C. Each active sites was inspected during this reporting period.

D. All were inspected weekly.

E. The frequency of site inspections was based on the project size, the project type and the degree of exposure to its surroundings.

7. Permanent Stormwater Controls (Section 4.2.5)

B. All projects involving ground disturbance and/or changes in stormwater are reviewed by the city's consulting engineer.

E. The city webpage www.greenbriertn.org/building_codes provides reference that the stormwater ordinance is available through the city offices.

F. Three project plans were reviewed during this reporting period.

G. Three project plans were approved after all review comments were addressed and corrections were made.

H. Three permanent stormwater management facilities were inspected.

I. Both facilities were found to be in compliance.

J. None.

K. None.

O. Current there is no standard city maintenance agreement. The city intends to establish such agreement in 2016.

8. Codes and Ordinances Review and Update (Section 4.2.5.3)

B. The stormwater ordinance was reviewed and the Tennessee Permanent Stormwater Management and Design Guidance Manual was adopted.

9. Stormwater Management for Municipal Operations (Section 4.2.6)

A. Procedures are in place and employees have been trained in all of these areas. No procedural document exists.

B. Daily stormwater inspections are conducted by on-site employees.

C. Procedures are in place and employees have been trained in all of these areas. No procedural document exists.

D. No prioritization system is in place.

E. Most facilities are small and allow for daily observance.

F. Facilities are maintained when needed as visually determined.

H. Refreshers in stormwater management training are accomplished through weekly and monthly employee meetings.

10. Stormwater Management Program Update (Section 4.4)

A. The stormwater ordinance was reviewed and the Tennessee Permanent Stormwater Management and Design Guidance Manual was adopted. A large scale sewage treatment plant design is being constructed to lessen the effect of stormwater influence and prevent overflows during rainfall events.

11. Evaluating/Measuring Progress

A. Nine drinking water samples per month are taken from the municipal water reservoir and tested for E.coli. and other coliform bacteria.

Three samples per week are taken from the sewage treatment plant discharge and tested for BOD, COD, nitrate, phosphorous and E. coli.

All parameters have been tested for numerous years.

B. The stormwater program, as it now exists, was formally established in 2013. Test data is not currently used to evaluate performance of the program.

12. Enforcement

C. The most common violation is sediment and erosion.

13. Program Resources

A. The specific annual expenditure on the stormwater program has not been accurately tracked in the past.

B. The city plans to budget for expenditures specifically assigned to the stormwater program in 2016.

E. Due to the size of the organization, no full-time employees have been assigned specifically to the stormwater program. In 2016 the city plans to re-establish a designated stormwater manager who will receive the proper training in stormwater inspection and management. That person will also have other responsibilities that will be compatible with site inspections and reporting.

Proposed Final Version 2014 303(d) LIST (Red River Watershed cont.)

Waterbody ID	Impacted Waterbody	County	Miles/Acres Impaired	CAUSE (Pollutant)	Pollutant Source	COMMENTS
TN05130206 003 - 1320	UNNAMED TRIB TO CARR CREEK	Robertson	1.6	Nitrate+Nitrite Total Phosphorus Temperature Alterations Escherichia coli	Municipal Point Source	Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.
TN05130206 003 - 1350	CARR CREEK	Robertson	7.8	Escherichia coli	Collection System Failure	Stream is Category 5. (One or more uses impaired.)
TN05130206 003 - 1355	CARR CREEK	Robertson	11.3	Nitrate+Nitrite Total Phosphorus Escherichia coli	Collection System Failure	Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.
TN05130206 003 - 1360	BROWNS FORK	Robertson	6.2	Escherichia coli	Pasture Grazing	Stream is Category 5. (One or more uses impaired.)
TN05130206 003 - 1550	MILLERS CREEK	Robertson	3.5	Loss of biological integrity due to siltation	Land Development	Stream is Category 5. (One or more uses impaired.)
TN05130206 003 - 3000	SULPHUR FORK	Robertson	1.9	Low Dissolved Oxygen Total Phosphorus Loss of biological integrity due to siltation	Municipal Point Source Discharges from MS4 area	Stream is Category 5. (One or more uses impaired.)
TN05130206 003 - 4000	SULPHUR FORK	Robertson	8.6	Escherichia coli	Discharges from MS4 area	Stream is Category 5. (One or more uses impaired.)
TN05130206 019 - 0321	FREY BRANCH	Robertson	7.2	Nitrate+Nitrite Total Phosphorus Loss of biological integrity due to siltation Escherichia coli	Municipal Point Source Unrestricted Cattle Access	Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.
TN05130206 019 - 1000	SOUTH FORK RED RIVER	Robertson	12.9	Escherichia coli	Pasture Grazing	Stream is Category 5. (One or more uses impaired.)
TN05130206 024 - 0150	SUMMERS BRANCH	Robertson Sumner	12.6	Nitrate+Nitrite Total Phosphorus Loss of biological integrity due to siltation Escherichia coli	Municipal Point Source Urbanized High Density Area Pasture Grazing	Impacts include Portland STP. Category 5. EPA approved a pathogen TMDL that addresses some of the known pollutants.
TN05130206 024 - 1000	RED RIVER	Robertson	6.6	Total Phosphorus Loss of biological integrity due to siltation Alteration of stream-side or littoral vegetation	Pasture Grazing Nonirrigated Crop Production	Stream is Category 5. (One or more uses impaired.)
TN05130206 034 - 0300	NOAHS SPRING BRANCH	Montgomery	2.8	Unknown Toxicity	Undetermined Source Source in Other State	Stream is Category 5. (One or more uses impaired.)

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Mayor & Board of Aldermen

City Superintendent

Building & Codes

Maintenance

Water

Sewer

Sanitation

Police

Fire

Streets

Parks

Note:

Each department head is responsible for the management of environmental and safety activities in their individual department.



CITY ORGANIZATIONAL CHART
GREENBRIER, TN